INSTRUMENTS AND EXPERIMENTAL TECHNIQUES

Volume 30, Numbers 1-6, 1987

(A translation of *Pribory i Tekhnika Éksperimenta*)

Volume 30, Number 1, Part 1, January-February, 1987

	Engl./Russ.	
Hodoscopic Photomultipliers and Their Use in Particle Detectors (Survey) - V. G. Vasil'chenko and V. I. Rykalin	1	7
NUCLEAR TECHNIQUES		
Microtron with Adjustable Accelerated-Electron Energy - V. I. Gridnev, E. I. Rozum, A. M. Slupskii, and S. A. Vorob'ev	16	20
Compact Pulsed Source of Nanosecond Electron Beams - V. M. Karpov, Yu. G. Konev, V. V. Larin, V. M. Orlovskii, V. V. Osipov, and M. M. Shtein	20	23
Relativistic-Positronium Channel of Accelerator at Institute of High-Energy Physics - K. I. Gubrienko, M. M. Zaitsev, V. E. Zelenin, V. I. Kotov, Yu. A. Lastochkin, E. A. Lyudmirskii, V. L. Rybkov, B. A. Serebryakov, A. I. Grigor'ev, A. V. Kuptsov, L. L. Nemenov, E. E. Polbennikov, and L. M. Smirnov	23	26
Magnetic System for Transport of Relativistic Electron Beam - E. B. Alfeev, A. V. Grigor'ev, S. L. Zaients, V. A. Popova, N. N. Popova, N. M. Chestnova, Yu. A. Chubanova, and G. A. Shneerson	29	31
Accuracy of Neutron-Beam Polarization Measurement by Shim Method - M. I. Tsulaya, M. S. Gabeliya, and S. I. Dzhamaspishvili	32	33
Spectrometer for Rare Alpha-Decay Events - A. N. Kuznetsov, V. F. Kushniruk, O. K. Nefed'ev, A. V. Rykhlyuk, V. G. Subbotin, V. I. Tomin, Yu. P. Kharitonov, and Yu. S. Tsyganov	35	36
Determination of Lifetimes of Isomeric States of ^{172}Yb and ^{181}Ta Nuclei with Single-Crystal Scintillation Time-of-Flight Spectrometer - A. Zhil'tsov, V. A. Morozov, V. I. Razov, V. I. Stegailov, and V. Tan'ska-Krupa	40	39
Study of Space Resolution of Plastic Streamer Tubes - I. A. Golutvin, V. Kh. Dodokhov, V. Yu. Karzhavin, Yu. T. Kiryushin, L. V. Komogorova, V. N. Lysyakov, D. Poze, and S. Riemann	44	43
Fiber-Optic Data Acquisition from High-Current Wire Chamber - A. F. Buzulutskov, V. G. Vasil'chenko, and L. K. Turchanovich	48	47
Gas Electroluminescent Proportional Detector with Photocathode in Working Chamber - P. A. Bagryanskii, V. S. Belkin, V. G. Dudnikov, and E. I. Shabalov	51	49
COMPUTER APPLICATIONS		
Multimode Controller for Interfacing SM-3 and SM-4 Minicomputers with CAMAC-COMPEX Hardware - S. G. Basiladze and O. Z. Éloev	55	53
CAMAC-Compatible Quantizer Module Based on High-Speed Parallel Analog-Digital Converter - Yu. A. Budagov, V. G. Zinov, M. Seman, A. A. Semenov, B. Sitar, and J. Spalek	62	59
Improving Spectrometer-Channel Resolution by Minicomputer Processing of Experimental Data - V. A. Voronov, Yu. I. Nechaev, and G. P. Pokhil	66	63
Interfaces for Universal Branch Driver with ES Computer for Data Acquisition from BIS-2 Filmless Spectrometer - B. N. Gus'kov, D. A. Kirillov, and A. N. Morozov	69	65
BD-411 Branch Driver - N. V. Gorbunov, A. G. Karev, É. I. Mal'tsev, and B. A. Morozov	73	69
Displacement-to-Number Converter and Its Interfacing with Microprocessor System - V. T. Malikov, I. Ya. Khaimzon, A. I. Kachkovskii, and S. L. Chumachenko	80	76

	Engl.	Russ.
Interface for 15VSM-5 and Élektronika D3-28 Minicomputers with Digital Measuring Instruments - N. A. Udovichenko, Yu. I. Polikarpov, and B. V. Makushkin	84	79
ELECTRONICS AND RADIO ENGINEERING		
High-Speed 10-Bit Analog–Digital Converter - E. A. Meleshko and S. V. Oleinik	89	84
High-Speed Precision Voltage Follower - A. A. Danilov	92	87
Eight-Input Event Selector - E. A. Arakelyan, G. L. Bayatyan, G. S. Vartanyan, and N. K. Grigoryan	95	89
Module for Delay and Recording of Nanosecond Pulses Using High-Speed Memory - A. A. Denisenko, I. V. Kotov, A. A. Lebedev, S. A. Medved', Yu. V. Mikhailov, and A. V. Shchukin	97	92
Stable Digital Delay Line - B. Yu. Dolgii, A. B. Eliseev, and R. Sh. Zagidullin	101	95
Wideband Time-Scale Converter - M. V. Korolev	103	96
High-Speed Center-of-Gravity Detector for Fluctuating Pulse Signals - D. A. Efremenko, E. I. Tabachnik, and A. V. Petrushenya	106	100
Device for Discrete Phasing of Standard Radio-Frequency Pulse Trains - V. F. Grigor'ev and V. V. Danilevich	110	103
New Semiconductor Device with Negative Differential Conductance - S. G. Bantser, E. A. Gule, and A. I. Klimovskaya	114	107
High-Speed Commutation System for Arkad'ev–Marks Voltage-Pulse Generator - N. K. Kapishnikov	116	109
High-Power Current-Pulse Generator - N. A. Ivannikov and S. A. Simkin	121	112
Quasioptical Semiconductor Generator with Radial-Waveguide Excitation - B. M. Bulgakov, V. N. Skresanov, A. I. Fisun, and A. I. Shubnyi	123	114

Volume 30, Number 1, Part 2, January-February, 1987

ELECTRONICS AND RADIO ENGINEERING		
High-Power FET Generator - A. A. Ageev	127	116
Wideband Low-Noise Intermediate-Frequency Amplifier for Radiometric Receivers - Yu. A. Nemlikher, A. F. Rukavitsyn, and I. A. Strukov	129	118
Devices for Wideband-Noise Protection - A. P. Pokhilyuk and I. V. Trotsishin	133	121
Pulse-Locked Time-Interval Generator - E. G. Pashuk and A. Sh. Ataev	136	124
High-Speed Phase-to-Voltage Converter - V. V. Khilil' and V. F. Denisov	139	126
Optoelectronic Image Converter Based on MF-14 Integrated-Circuit Photodiode Array - V. D. Gorodilov	142	129
Accumulating Angle-to-Digit Converter - A. S. Mikhalev, S. N. Sidoruk, and I. M. Chushenkov	144	130
High-Speed Frequency-to-Voltage Converter - S. N. Gryzov, V. K. Chistyakov, and Yu. S. Pesotskii	146	132
Analog–Digital Optical Telemetry Line - E. P. Bochkar', A. I. Zakharov, S. N. Polyakov, and V. A. Samorodov	148	134
Switching Peak Detector with Wide Frequency and Dynamic Ranges - E. N. Anuchin and A. P. Pylov	152	138
Integrated-Circuit Transistor Arrays in Precision Voltage Regulators - A. V. Churbakov	153	139
Stable Alternating-Sign High-Voltage Supply - I. K. Didebulidze and N. I. Tsagareli	155	141
DC Voltage Regulator for Micropower Devices - V. V. Volovskii	158	143
General-Purpose Current Regulator for Electromagnets - V. S. Belkin, D. D. Gruich, and S. V. Pichko	159	145

		Engl.	Russ.
	GENERAL EXPERIMENTAL TECHNIQUES		
79	High-Power Kapitsa Apparatus for Study of Microwave Pinch Discharge in Gases - S. I. Filimonov, A. B. Manenkov, and A. I. Degal'tsev	161	147
	Metal-Ion Source with Hot Hollow Cathode - V. A. Saenko, A. A. Derkach, and G. N. Veremeichenko	168	154
84	Fast-Atom Ion Source for MKh-1310 Mass Spectrometer - V. A. Pokrovskii, V. I. Borisevich, and A. M. Glukhoi	170	156
87	Ion-Kinetic-Energy Spectrometer Based on MKh-1311 Mass Spectrometer - G. S. Medynskii, M. E. Akopyan, L. N. Gall', V. I. Kleimenov,		
89	K. O. Kallistov, Yu. L. Sergeev, D. V. Togatov, A. B. Chistyakov, and Yu. I. Khasin	172	158
92	Detector for Registration of Ions, Electrons, and Neutral Particles of Laser Plasma - V. M. Komarov	175	161
95	Plasma Electron Source with Sectional Cold Hollow Cathode - A. S. Metel'	178	164
96	High-Voltage Pulsed Electron Source with Plasma Emitter for Radially Divergent Beam - A. M. Efremov, B. M. Koval'chuk, Yu. E. Kreindel', V. S. Tolkachev, and P. M. Shchanin	182	167
100	Contactless Method for Study of Radio-Frequency Plasma Fields - E. M. Busheva, V. L. Gol'tsman, Yu. V. Zadiraka, V. A. Silin,		
103	R. Z. Faizullin, and V. B. Khavaev	185	170
107	Study of Aftereffect of Photomultiplier in Photon-Count Mode - V. M. Mitev and I. V. Grigorov	188	172
109	Some Operating Characteristics of Herringbone Microchannel Amplifiers - N. M. Shyutte, S. M. Sheronova, G. P. Vasnina, É. A. Platov, and		
112	V. G. Kaptsov	191	175
114	High-Speed Pyroelectric Detector - E. N. Gergel', V. D. Divin, A. S. Elizarov, Yu. A. Kulyupin, and V. S. Lysenko	194	178
	Digital Demodulator - Yu. N. Shcherbich and S. V. Kholondyrev	197	181
	Electrooptic Light Modulators - V. A. Pilipovich, V. I. Polyakov, and A. I. Konoiko	199	182
	TIBR Shadow Pulse Recorder for Diagnosis of Nonstationary Phase Objects - T. P. Kosoburd, V. A. Krasnov, and Yu. M. Sorokin	202	185
116	YAG:Nd^{3+} Laser for Study of High-Speed Processes - N. R. Belashenkov, M. V. Inochkin, and V. B. Karasev	204	186
118	Pulsed Laser Charge-Transfer Device for Mass Spectrometer - D. D. Bogdanov, O. A. Orlova, A. M. Rodin, S. I. Sidorchuk, V. A. Timakov, and		
121	G. M. Ter-Akop'yan	206	188
124	Power Regulator for Helium–Neon Laser - V. E. Kositsyn and A. V. Timashov	208	190
126	Field-Emission Microscope-Analyzer - V. A. Kasatkin, V. I. Kvintradze, and A. L. Suvorov	210	191
129	Use of Modulation in Electron Diffraction Studies - O. N. Beloshov and M. I. Tsindlekht	214	195
130	Combination X-Ray Detector with Scintillator and Silicon Photodiode - A. Ya. Gliberman, I. I. Kovalev, A. I. Leichenko,		
132	G. A. Chetverikova, and T. A. Borisova	216	197
134	High-Speed Valve with Slotted Nozzle for Production of Long Pulsed Supersonic Jet - G. S. Baronov, D. K. Bronnikov, A. E. Varfolomeev, A. A. Makho, and A. V. Usenkov	218	199
138			
	LABORATORY TECHNIQUES		
139	Interface for F5095 Indicator with Élektronika D3-28 Minicomputer - A. A. Ivanov, N. D. Mostovoi, and V. F. Peklun	221	202
141	Device for Micromovement of Contacts - Yu. M. Biyanov, Yu. I. Klimanskii,		
143	and É. N. Kuz'min	223	204
145	Field-Emission Cathodes of Glass-Insulated Microwire - F. G. Donika, D. F. Miglei, and V. V. Smyslov	224	205
	Removal of Sealed-on Glass from Kovar Parts - E. A. Kolenko	225	206
	Brightness Stability of Capillary Flash Lamps - G. A. Volkova, V. G. Lyskov, and I. A. Khrapunovich	226	206

	Engl./Russ.	
Multiple-Reflection Cells for Luminescent Analysis - N. L. Vekshin.....	228	208
Cassette for Liquid-Phase Epitaxial Growth of Multilayer Periodic Structures - S. N. Krasovitov, A. G. Kuznetsov, and A. L. Medvedev.....	231	211
Sealing Unit for Pistons of High-Pressure Devices - S. V. Cherepov and V. A. Chernenko.....	233	213
Fiber-Optic Thermometer - A. S. Ryabov, V. N. Mavrin, A. V. Mazur, S. K. Morshnev, and A. V. Frantsesson.....	235	215
Miniature Resistance Thermometers Based On GaAs Filamentary Crystals for the Range of 0.4-300°K - S. S. Varshava, G. A. Kytin, A. A. Manenkov, G. N. Mikhailova, V. F. Troitskii, and K. S. Shcherbal.....	239	219
Thermoregulator and Helium-Level Indicator Using MK-64 Pocket Calculator - S. V. Bogdanov and N. Ya. Donchenko.....	242	222

Volume 30, Number 2, Part 1, March-April, 1987

Photomultiplier Characteristics as Functions of Temperature (Survey) - S. S. Vetokhin, A. N. Pertsev, and I. V. Reznikov.....	245	7
NUCLEAR TECHNIQUES		
Voltage-Pulse Generator for Electron Gun - S. A. Korenev, I. B. Enchevich, and M. K. Mikhov.....	253	13
Measurement of Spectrum of X-Radiation Generated in Diode of High-Current Accelerator - A. Yu. Kropotov, O. N. Morgun, and V. V. Chernyi.....	255	15
Energy Spread of Particles in Beam of Electrostatic Accelerator - O. B. Dzagurov, N. V. Eremin, V. V. Krivolap, E. I. Sirotinin, and V. F. Strizhov.....	262	20
Foils for Exit Windows of Industrial Electron Accelerators with Increased Current Density - E. S. Machurin, G. I. Klenov, V. V. Vladimirov, S. A. Gus'kov, V. P. Kulichenko, N. A. Mel'nikova, L. M. Pachkalin, and P. V. Petrenko.....	264	22
Measurement by Multiwire Sensors of Current and Profile of Charged and Neutral Components of Hydrogen Beam - V. I. Batkin, V. N. Getmanov, and O. Ya. Savchenko.....	268	26
Prototype of HELIOS-12 Source of Multiply Charged Ions - K. S. Golovanivskii, V. D. Dugar-Zhabon, D. V. Reznikov, and S. A. Safonov.....	273	30
Portable Spectrometer for Correlation Experiments - V. I. Gavrilyuk, Yu. A. Dei, O. B. Mel'nikov, R. G. Ofengenden, Yu. V. Patlan', V. A. Sidorenko, I. P. Tkachuk, and V. V. Trishin.....	276	33
Eight-Channel Threshold Cerenkov Counter with Air Radiator - E. G. Devitsin, M. V. Zavertyaev, V. A. Kozlov, and V. V. Pavlovskaya.....	281	37
Improvement of Accuracy of Coordinate Determination in Lead-Glass Detector Containing Active Converter - A. M. Blik, V. N. Kolosov, V. I. Romanovskii, and A. S. Solov'ev.....	285	41
Sensitometric Characteristics of UF-4, UF-5, and UFSh-0 Films in the Quantum-Energy Range of 5-30 keV - I. M. Datsko, M. A. Slabkovskaya, A. S. Sokolov, N. V. Uvarova, and M. A. Sheromov.....	287	43
COMPUTER APPLICATIONS		
Two-Processor Computer System Based on Élektronika NTs-03D Computer - A. V. Eliseenko, V. M. Kazak, T. A. Kosykh, A. I. Morozov, and M. G. Sedunov.....	291	46
Data-Processing and Control System Based on Élektronika D3-28 Microcomputer for Vibrating-Reed Magnetometer - M. B. Dorofeeva, V. V. Chernobrovkin, V. V. Petrov, and Yu. G. Chukalkin.....	295	50
Automated Bench for Determination of Parameters of Multiterminal Networks - V. D. Rudyk, A. A. Dryuchin, and N. A. Argat.....	297	52

		Engl./Russ.
Interface Adaptor for Élektronika-60 Computer and "Common Bus" Crate Controller - S. G. Basiladze, A. N. Smirnov, and V. V. Suvorov.....	300	54
Programmer for Memories, Logic Arrays, and Logic Controllers - S. G. Basiladze, A. N. Smirnov, V. V. Suvorov, and S. A. Fastov.....	303	57
Programmable Amplifiers for Computer Communications Systems - N. V. Dmitriev.....	307	61
Sample-and-Hold Devices for 12-14-Bit Analog–Digital Converters - A. A. Danilov.....	309	63
Multichannel Memory-Scanning Time-Mark Units - N. I. Zamyatin.....	313	66
Reversible Stepper Drive - A. L. Logutko, V. Yu. Moiseenko, and V. I. Fesenko.....	318	71
ELECTRONICS AND RADIO ENGINEERING		
Dynamic Analog Memories for Time-Interval-Flow Analysis - V. I. Pranovich.....	321	74
Selection of Reference Pulse in Analysis of Randomly Overlapping Photon Fluxes - V. N. Denisenko, M. A. Ivanov, and I. P. Prokopovich.....	325	77
Digital Accumulator with Successive Moving Pulse Summation - V. P. Demchenkov and I. N. Korobkov.....	328	79
Four-Channel Analog–Digital Converter - V. M. Kuleshov.....	331	82
High-Power Square-Pulse Generator - B. Z. Movshevich, L. A. Belova, M. Yu. Kryl'tsov, and E. A. Shirokov.....	333	84
High-Voltage Pulse Generator with High Actuation Frequency - N. K. Kapishnikov.....	336	87
Nanosecond Pulse Generator - G. A. Bernashevskii, V. I. Voroshen', and S. A. Milovanov.....	340	90
Resonant Megavolt Pulse Generator - K. A. Zheltov, A. V. Malygin, A. N. Petrenko, and V. F. Shalimanov.....	343	92
Reliable, Precisely Synchronized 100-kV Discharger - V. S. Bosamykin, A. I. Gerasimov, D. I. Zenkov, K. A. Morunov, S. T. Nazarenko, A. I. Pavlovskii, S. Ya. Slyusarenko, and A. S. Fedotkin.....	346	94
Transparent Laser Dischargers - K. I. Kozlovskii, A. S. Tsybin, and A. E. Shikanov.....	349	98
High-Current Gas-Filled 5-kV Discharger - N. K. Kapishnikov.....	352	100
Pulse Transformer for Recording of Nanosecond Currents - V. P. D'yakonov and V. Yu. Smerdov.....	355	103
Pulse Shaper with Amplitude-Compensated Time Locking Onto Mathematical Center of Gravity - V. G. Vasil'chenko, V. V. Dronov, V. G. Lapshin, and V. I. Rykalin.....	357	105

Volume 30, Number 2, Part 2, March-April, 1987

ELECTRONICS AND RADIO ENGINEERING		
Shaper with Precision Time Locking - N. P. Valuev and A. N. Zhikharev.....	365	111
General-Purpose Programmable Voltage Divider for Photomultipliers with Increased Load - V. Ya. Zubchenok, A. A. Nakhan'kov, I. V. Reznikov, and E. D. Tverdokhlebov.....	367	112
Measurement of Pulse Voltage in High-Current Diode by Means of Germanium Sensors - Ya. E. Krasik, V. M. Matvienko, and A. A. Sinebryukhov.....	370	115
Automated Systems for Recording of Pulsed Light Images Using Charge-Coupled Devices - V. I. Korzh, V. T. Subbotin, V. I. Chernikov, and V. M. Yushchenko.....	373	117
Regulated Bipolar 0-200-kV Supply - Yu. V. Borisov, V. F. Ezhov, S. N. Ivanov, V. M. Lobashev, and A. P. Serebrov.....	376	120
RF Frequency Divider with Variable Division and Off-Duty Factors - V. N. Teplukha.....	380	123
High-Speed Paraphase Pulse Amplifier - N. L. Vinogradov and F. V. Samoilov.....	382	125

Engl./Russ.

Picosecond Amplifier Modules with Increased Output Voltage - B. I. Avdochenko and V. N. Il'yushenko..... 383 126
High-Speed Electrometer - S. K. Kuroedov..... 386 129
Photoelectric Meter of Time Intervals between Spark-Discharge Flashes - E. A. Gordeenya and V. G. Filippov..... 389 131
Gain Regulator for Avalanche Photodiode - E. P. Bochkar', A. I. Zakharov, A. A. Titaev, and P. P. Shirokov..... 391 133

GENERAL TECHNIQUES
Metal-Plasma Source - A. I. Vladimirov, S. V. Goryuk, and V. A. Saenko..... 395 136
Gas-Magnetron Electron Source - A. P. Semenov and M. V. Mokhosoev..... 398 138
Analysis of Field-Emission-Current Fluctuations - B. V. Bondarenko, Yu. A. Lyangasov, A. Yu. Cherepanov, and E. P. Sheshin..... 401 141
Compact Getter Pump with Arc Titanium Evaporator - E. D. Bender, G. F. Kuznetsov, and V. Ya. Savkin..... 405 144
Pulse-Amplitude Distributions of Photomultipliers for Various Types of Ionizing Radiation - S. N. Makeev, V. A. Petrov, I. M. Smelyanskii, and N. M. Trubitsyn..... 408 146
Reproducibility of Photomultiplier Anode Current with Pulse Control and Illumination - A. I. Terpilovskii..... 413 149
Effect of Input Window on Noise of Photoelectronic Devices - I. V. Reznikov..... 416 152
Automated Time-of-Flight Mass Spectrometer with Molecular-Beam Sampling - L. V. Kuibida, O. P. Korobeinichev, M. G. Marasanov, S. V. Polozov, and V. B. Bystrenko..... 418 154
Mass-Spectrometer Differential Gas Micromanometer - M. E. Slutskii and M. A. Pushkina..... 421 156
Intensity Calibration for Study of Light Scattering - A. V. Batunina, V. V. Voronkov, V. P. Kalinushkin, and T. M. Murina..... 424 159
Photoelectric Shadow Diffraction Method - V. E. Alekhin and I. V. Ershov.... 426 161
Spectral Sensitivity of CsI Photocathodes Applied to Microchannel Plates - B. N. Bragin, I. M. Vesel'nitskii, E. S. Voskoboinikova, A. E. Melamid, and A. A. Akopyan..... 429 163
Measurement of Refractive Indices of Liquid Crystals Using a Tunable Source of Coherent Infrared Radiation - V. Ya. Zyryanov and V. Sh. Épshtein... 431 164
Mode-Locked He–Ne Laser ($\lambda = 1.15$ μm) for Diagnosis of Fiber Light Guides - T. V. Babkina, R. A. Bogoroditskaya, V. V. Grigor'yants, B. M. Gur'ev, M. I. Lobachev, A. P. Mironychev, É. M. Rabinovich, and V. V. Tuchin..... 433 166
Synchronization of Control Systems of LTI-PCh and Arzni-2501 Lasers - A. P. Vinnichenko and V. I. Kislenko..... 437 169
Triggering of Spark Discharger by Ultraviolet Laser Radiation Transmitted Through Light Guide - E. V. Kumpyak, M. I. Lomaev, G. A. Mesyats, A. N. Panchenko, Yu. F. Potalitsyn, and V. F. Tarasenko..... 439 171
Production of Static Pressures of Up to 100 GPa Using Diamond Anvils - V. N. Kachinskii and S. M. Stishov..... 442 173
Diamond Chamber for Shear Deformation of Solids at Pressures of Up to 86 GPa - I. A. Barabanov, V. D. Blank, and Yu. S. Konyaev..... 445 176
Apparatus for Study of the Effect of Surface Acoustic Waves on Gas Flow - A. A. Elfimov, B. T. Porodnov, V. D. Seleznev, and A. G. Flyagin..... 447 177
One-Dimensional Array Based on Si(Li) Detectors for Scanning X-Ray Introscopes - A. A. Petushkov, S. I. Musyankov, U. V. Shchebiot, V. P. Kaminskii, M. K. Rozhdestvenskaya, and V. P. Zuev..... 449 179
Automatic Delay Controller - L. N. Lozovoi..... 453 182
Cesium Injector for Thermionic Microscope - V. A. Koryukin, V. P. Obrezumov, and P. D. Chilingarishvili..... 457 186
Use of Brightness Amplifier Based on Microchannel Plate in High-Resolution Transmission Electron Microscope - N. D. Zakharov and S. I. Gavrikov... 459 188

LABORATORY TECHNIQUES
Resistance-to Voltage Converter for Low-Temperature Carbon Thermometers - V. I. Trotsenko, I. M. Karnaukhov, A. A. Lukhanin, and V. F. Chechetenko..... 461 189
Research Complex for Electron-Beam Lithography - S. V. Babin, A. V. Davydov, and A. I. Erko..... 463 191
Economical High-Vacuum Adsorption Pump - B. Z. Kanter..... 470 197
Transfer Device with Hermetic Cassette for High-Vacuum Apparatus - A. A. Isaev, S. A. Lapshin, É. A. Angilov, and M. F. Potokov..... 472 199
Distortion of Photomultiplier Signals by Background Luminous Flux - Yu. V. Vavilov and V. I. Zubkov..... 474 200
Tritium Pressure Gauge - V. A. Voitenko, V. M. Gul'ko, N. F. Kolomiets, A. M. Sviridov, A. E. Shikanov, and K. I. Yakovlev..... 477 202
Methane Evacuation by Compact Gadolinium Getter Ion Pump - R. G. Varnakova, V. T. Grinchenko, and V. A. Koren'..... 479 203
Square-Pulse Shaper for Light-Emitting Diode - A. T. Dideikin..... 480 205
Laser-Radiation Focusing Sensor - E. I. Dmitriev and A. P. Shestakov..... 482 206
Attachment to Single-Beam Spectrophotometer for Recording of Differential Reflection Spectra - S. N. Gruzinov and V. P. Tolstoi..... 485 208
Thermoelectric Detector for Measurement of Ion and X-ray Energies of Laser Plasma - V. M. Komarov, A. V. Mezenov, V. M. Migel', and N. V. Ponomareva..... 487 210
Radius-of-Curvature Meter for Reflecting Surfaces - A. N. Gromov and V. B. Shchulyat'ev..... 489 212
Low-Temperature Radio-Frequency Matching Device - A. V. Golik, A. P. Korolyuk, and V. I. Khizhnyi..... 491 213
Simple Chamber for Low-Temperature Optical Studies - I. A. Vasil'ev..... 493 215
Cryostats for Measurements at Temperatures of 2-400°K and in Magnetic Fields of Up to 7 T - N. A. Asadullaev..... 494 216

Volume 30, Number 3, Part 1, May-June, 1987

Multistop Systems for Statistical Time Analysis of Random Signal Flows (Survey) - V. V. Danilevich and E. V. Novikov..... 497 7

NUCLEAR TECHNIQUES
Current-Pulse Generator for Electromagnet of Induction Accelerator - B. A. Baginskii, V. N. Makarevich, and M. M. Shtein..... 512 22
100-keV Electron Gun - B. S. Ishkhanov, M. Yu. Nikol'skii, S. P. Rakitin, I. M. Piskarev, and V. I. Shvedunov..... 515 24
Experiments in Profound Deceleration of a Monoenergetic Electron Beam - V. S. Gorshkov and O. Yu. Naguchev..... 517 26
Compact Primary Converter for Energy and Flux Density of Accelerated Electrons - K. A. Vinogradov, A. V. Gubanov, and A. M. Tron'..... 520 28
Surface-Plasma Source of Negative Hydrogen Ions - G. E. Derevyankin and V. G. Dudnikov..... 523 31
Telescope of Proportional Chambers for SP-103 Magnetic Spectrometer of LU-2GeV Linear Accelerator - V. F. Popov, A. E. Zatserklyanyi, A. A. Nemashkalo, Yu. N. Ranyuk, and V. F. Chechetenko..... 528 35
Registration of Ionization Clusters by Electroluminescent Drift Chamber - A. D. Volkov, V. M. Grebenyuk, B. Zh. Zalikhanov, E. V. Komissarov, V. Z. Serdyuk, V. V. Sidorkin, P. S. Filimonon, and J. Jani..... 531 38
Gamma-Radiation Registration Efficiency of Herringbone Assembly of Microchannel Plates - A. L. Shilov, L. S. Ershov, V. N. Ivanov, A. V. Il'chenko, L. Ya. Morgovskii, and A. M. Tyutikov..... 538 43
Scintillation Hodoscope with Working Area of 50 × 50 cm Based on Hodoscopic Photomultipliers - V. V. Borog, V. G. Vasil'chenko, A. V. Demekhin, V. V. Dronov, and V. I. Rykalin..... 542 46

	Engl./Russ.	
Hodoscope Module with Miniature Photomultipliers - L. I. Bel'zer, A. M. Gribushin, L. Ya. Zhil'tsova, E. N. Matveeva, T. D. Pilipenko, and N. B. Sinev	548	50
One-Dimensional Position-Sensitive Detector for X-Ray Studies at Ultrahigh Pressures - Yu. V. Zanevskii, S. A. Movchan, V. P. Peshekhonov, Chan Dyk Tkhan, I. V. Aleksandrov, A. N. Zisman, and S. M. Stishov	551	53
COMPUTER APPLICATIONS		
Analog System for Orientation of Single-Crystal Target in Electron Accelerator - B. R. Meshcherov and V. I. Tumanov	555	56
Multiplicity Registration in Hodoscope Systems with a Large Number of Registration Channels - N. M. Nikityuk	559	59
Allowance For Distortions of Time Spectra Obtained with Parallel Multistop Time-to-Number Converters - V. Ya. Kezerashvili	566	66
Method for Matching of Signal Ranges in On-Board Digital Processing Systems - I. D. Magin and V. A. Pogribnoi	569	68
Control of Data Characteristics of Photodetector Based on Charged-Coupled Device for Image Input to Computer - S. A. Molodyakov	572	71
Interface for Digital Voltmeter with Élektronika D3-28 Computer - V. V. Bobrovskii, S. G. Komissarov, and F. V. Tikhonov	577	75
ELECTRONICS AND RADIO ENGINEERING		
High-Speed Parallel-Series Analog-Digital Converter - A. Yu. Pogosov	579	77
Wideband Charge-to-Number Converter - V. A. Kantserov and V. B. Strigin	583	80
Digital Time-Interval Generator for Lasers - A. N. Tur	587	84
Measurement of Settling Time of High-Speed Analog and Digital-Analog Converters - A. A. Danilov, A. Yu. Pogosov, and D. E. Polonnikov	589	86
High-Speed Programmable Frequency Divider - V. P. Potalui and B. A. Semanov	593	90
High-Factor Frequency Multiplier - V. I. Misevra, I. Kh. Albegova, O. A. Aleksandrova, Yu. V. Zhilin, and L. G. Kovalenko	595	91
Programmable Arbitrary-Waveform Generator - V. A. Kantserov, A. S. Pershin, V. V. Rodionov, and V. K. Chernyatin	597	93
High-Voltage Nanosecond Pulse Generator with GIN-500-0.02/5 for Streamer Chamber - V. D. Aksinenko, N. S. Glagoleva, E. A. Dement'ev, N. I. Kaminskii, A. T. Matyushin, V. T. Matyushin, N. N. Nugrozhin, V. N. Ryakhovskii, E. K. Khusainov, and É. A. Shevchenko	601	97
High-Voltage Nanosecond Pulse Generator for Triggering of Megavolt Peaking Dischargers - L. A. Gromova, S. B. Evlampiev, G. S. Korshunov, M. T. Pichugina, and Yu. F. Sviridov	603	99
High-Power Nanosecond Pulse-Train Generator - I. F. Isakov, E. I. Logachev, M. S. Opekunov, S. A. Pechenkin, G. E. Remnev, and Yu. S. Usov	606	101
High-Voltage Nanosecond Pulse Shaper - N. K. Kapishnikov, V. M. Muratov, and A. A. Shatanov	608	103
Noise-Immune Pulse Shaper - D. I. Malinovskii	613	107
Optoelectronic Pulse Shaper with Increased Load Capacity - V. A. Matyna and I. A. Tereb	614	108
Commutator for High-Power Radio-Frequency Pulses - B. I. Petrov	616	109
Commutator for Inductive Storage Device - I. M. Gavrilov	618	111
Current Commutator for Generator with Inductive Storage Device - Yu. L. Sitenkov	620	113

Volume 30, Number 3, Part 2, May-June, 1987

ELECTRONICS AND RADIO ENGINEERING		
Magnetically Controlled Gas-Discharge Current Breaker - A. M. Arsh, V. I. Krizhanovskii, A. I. Kuz'michev, V. A. Lapshin, V. M. Rtishchev, and A. I. Shendakov	625	116

Controllable Peaking Gas-Filled 2.5-MV Discharger - S. B. Evlampiev, G. S. Korshunov, Yu. F. Sviridov, and V. V. Khmyrov..... 628 118
Controllable Nanosecond Repeated-Action Solid-State Discharger - G. S. Korshunov and V. M. Paigin..... 632 122
Wide-Band Apparatus for Recording the Shape of Single Impulsive Signals - A. D. Khil'chenko..... 635 124
Adaptive Pulse-Duration Meter - D. P. Palyanitsa, A. A. Latypov, and S. A. Leshchenko..... 640 129
Electrometric Amplifier Based on P–N Junction Field-Effect Transistors - A. G. Kuksov..... 644 132
Stroboscopic Integrator to Register Nuclear-Resonance Signals - V. P. Anferov and S. V. Molchanov..... 646 134
Measurement of Resonator Quality Factor in a Spectrometer for Nuclear Acoustic Resonance - I. I. Sadykov..... 647 135
Power Supply of a Plasma Emitter with Adjustable Parameters - V. B. Mel'nikov..... 650 137

GENERAL EXPERIMENTAL TECHNIQUES

Producing Large-Aperture Metal-Ion Beams - A. I. Akenov, S. P. Bugaev, V. A. Emel'yanov, G. P. Erokhin, N. G. Pankovets, A. M. Tolopa, and S. M. Chesnokov..... 652 139
FÉU-140 Photomultipliers in Pulsed Plasma Spectroscopy - M. S. Arteev and S. S. Sulakshin..... 655 142
Weak-Scintillation Light Yield Determination - I. G. Mandzhukov and B. V. Mandzhukova..... 657 144
Mass-Spectrometer Source for Making Ions of Thermally Labile Bioorganic Substances - K. V. Malakhov, A. N. Pyatakin, V. M. Tikhonov, and M. Ya. Turkina..... 662 148
Quadrupole Lenses Based on High-Energy Radially Magnetized Magnets - S. P. Kudryavtseva, A. I. Kudryavtsev, and Yu. A. Mel'nikov..... 665 151
Measurement of the Intensity of a Pulsed Magnetic Field in Magnetizing Devices - O. S. Kolotov, T. Sh. Musaev, and V. A. Pogozhev..... 670 155
Recording Unit of Squid-Based Magnetometer - V. M. Drobin, P. Lobotka, and V. N. Trofimov..... 673 158
Automatic Balance for High-Temperature Measurement of Magnetic Susceptibility - S. V. Konovalov, V. V. Singer, I. Z. Radovskii, and V. A. Klepinin..... 678 162
Low-Voltage Photoelectronic System for Isolating an Ultrashort Pulse with any Serial Number in a Train - M. I. Demchuk, S. M. Dmitriev, V. P. Mikhailov, G. A. Pribytok, and A. V. Strashko..... 682 165
Device for Recording Particle and Photon Flux Distributions - G. I. Shul'zhenko, A. A. Bashkeev, Yu. V. Kovalenko, and M. G. Fedotov..... 685 168
Automatic Laser Interference Refractometer for Studying the Dispersion of Gases - Yu. V. Mishchenko..... 689 171
Scheme for Stabilizing the Average Radiation Intensity of a He–Ne Laser - A. N. Grigorenko, P. V. Domnin, S. A. Mishin, and E. G. Rudashevskii..... 694 175
Universal Capacitive Spectrometer for Measuring the Parameters of Deep Centers in Semiconductors and MOS Structures - N. V. Bazlov, O. F. Vyvenko, and A. V. Tul'ev..... 696 176
Fast Capacitance Meter for Deep-Level Spectrometers - I. B. Puzin and A. I. Khorunzhii..... 701 181
Panoramic Device for Studying Electric Charge Accumulation and Relaxation - V. P. Pronin..... 704 184
Measurement of the Parameters of MIS Structures with Compensation of the Effect of the Capacitance of the Dielectric - V. M. Chaikovskii..... 709 187

Determination of the Dynamic Nonlinearity of Semiconductor and Combined Detectors for Computer-Assisted Tomography - A. G. Tur'yanskii, V. V. Kon'kov, and O. P. Fedoseeva..... 712 189
Diffraction Vacuum X-ray Photoelectron Spectrometer - M. V. Koval'chuk, Yu. N. Shilin, A. G. Denisov, Yu. M. Gravshin, I. A. Zel'tser, V. M. Lyapin, and R. S. Senichkina..... 715 191

LABORATORY TECHNIQUES
Targets for Nuclear-Physical Research - T. S. Nazarova, L. A. Marchenko, and E. O. Babichev..... 720 196
Apparatus for Vacuum Laser Deposition of Films - Yu. A. Timofeev..... 721 197
Method for Preparing a Cathode for a Low-Background Gas-Discharge Counter - V. V. Glazov, V. M. Glazov, and I. A. Feshchenko..... 723 198
Program Control of a Stepping Motor with the Help of the Élektronika D3-28 Microcomputer - S. V. Kirillov and V. A. Usin..... 724 199
Simple Circuit for Controlling a Four-Phase Stepping Motor - V. V. Lederer..... 727 202
Noise-Resistant Hall Magnetometer - A. I. Ivanenko and K. Shpiring..... 728 203
Universal Picosecond-Range Time-Analyzing Image-Converter Tube - G. G. Fel'dman, G. I. Bryukhnevich, V. M. Zhilkina, T. A. Il'ina, V. B. Lebedev, V. P. Simonov, and V. N. Syrtsev..... 730 205
Application of LI-702-4 Superkremnikon for High-Speed Computer Photography - M. B. Alekseev, V. P. Artemov, and M. A. Zheleznova..... 734 208
Liquid-Crystal Infrared Radiation Visualizer - A. N. Gromov, G. M. Zharkova, and S. I. Trashkeev..... 736 210
Focussing Mirrors Based on Fast-Setting Foam - Yu. A. Budagov, A. B. Iordanov, L. B. Litov, Yu. N. Kharzheev, and R. V. Tsenov..... 737 211
Simple Design of Window for a Pressure Vessel - M. Z. Azarkh, B. M. Kaporovskii, O. A. Prokhorenko, and N. N. Yurtsev..... 739 212
Modification to the Valve on a NZhR Pump for Use up to 3 kbar - I. N. Polandov, A. V. Kryukov, O. K. Gulish, and N. S. Alekhina..... 740 213
Acoustic-Signal Spectrum Analyzer - V. I. Semikhin..... 741 214
Heating Chamber for a Single-Crystal Diffractometer - N. G. Leont'ev and E. G. Fesenko..... 742 215
Use of the Élektronika MK-64 Calculator for Controlling an Electric Oven - M. S. Yunusov, Yu. Yu. Abdurakhmanov, V. M. Kim, and E. V. Ob"edkov..... 748 220
Cell for Low-Temperature Measurements on the Acoustic Parameters of Crystals - A. M. Antyukhov and V. I. Kutukhov..... 750 222
Economical Fiberglass Helium Cryostat - V. V. Shapovalenko and I. M. Smirnov..... 752 223

Volume 30, Number 4, Part 1, July-August, 1987

Systems for Preselection of Desired Events in Accelerator Experiments (Survey) - V. A. Kantserov and A. S. Pershin..... 755 7

NUCLEAR TECHNIQUES
Pulsed Electron Accelerator - B. A. Azimdzhanov, T. U. Arslanbekov, and V. E. Chekalin..... 770 21
Device for Measurement of Magnetic-Field Distribution of Siluet Accelerator - E. A. Zyat'kov, V. N. Kazakov, V. G. Kolesnik, V. M. Lanskov, and A. Sh. Khamidov..... 773 23
Deflector System for Intrapulse Phase Shift of Particles of Linear-Accelerator Beam - V. V. Zakutin, V. A. Kushnir, V. P. Romas'ko, and A. M. Shenderovich..... 777 27
High-Speed Two-Coordinate Profilometer - N. A. Goryainov, Yu. V. Efremenko, S. G. Kuznetsov, A. V. Smirnitskii, and B. B. Shvartsman..... 780 29

	Engl./Russ.
Electron Gun with Induction-Heated Emitter - Yu. Ya. Volkolupov, A. D. Kuribeda, P. I. Ryl'tsev, and A. G. Shein	783 32
Ion-Optical System of Heavy-Ion Source for Time-of-Flight Measurements - V. A. Batalin, B. K. Kondrat'ev, and V. I. Turchin	785 34
Internal Magnetic Target of Proton Synchrotron - V. V. Gachurin, M. M. Kats, L. N. Kondrat'ev, A. D. Rogal', and V. Yu. Rusinov	789 37
Stabilization and Calibration of Hodoscopic Cerenkov Spectrometer - A. S. Aleksanyan, A. V. Voskanyan, A. O. Gasparyan, A. Zh. Ketikyan, A. Zh. Petrosyan, and R. N. Pikhtelev	793 40
System of Proportional Chambers for Magnetic Spectrometer - L. S. Azhgirei, G. F. Akimova, L. V. Budkin, I. K. Vzorov, P. V. Zrelov, M. A. Ignatenko, Yu. A. Kozhevnikov, A. S. Kuznetsov, V. N. Samoilov, and G. D. Stoletov	797 44
Reconstruction of Neutron Energy Spectra from Calorimetric Measurements on the Serpukhov Accelerator - V. P. Balandin, E. A. Belogorlov, A. P. Vorob'ev, T. S. Grigalashvili, B. N. Gus'kov, V. P. Zhigunov, Yu. M. Ivanyushenkov, É. P. Kistenev, M. F. Likhachev, B. F. Polyakov, A. G. Kholodenko, and E. A. Chudakov	803 48
Characteristics of Lead-Glass Hodoscopic Electromagnetic Calorimeter with Aperture of 2 m^2 - G. S. Bitsadze, Yu. A. Budagov, Yu. F. Lomakin, S. N. Malyukov, A. A. Oleinik, N. A. Rusakovich, A. A. Semenov, V. B. Flyagin, Yu. N. Kharzheev, A. B. Iordanov, L. B. Litov, R. V. Tsenov, V. M. Maniev, I. A. Minashvili, and J. Spalek	808 52
Automated System for Calibration and Monitoring of Parameters of ChSPP-800 Multichannel Gamma Detector - I. A. Avvakumov, N. I. Belikov, Yu. M. Goncharenko, A. P. Meshchanin, S. B. Nurushev, and V. L. Solov'yanov	817 59
Programmable Manipulator for Control of High-Voltage Supply of Counters of Multichannel Detector - N. I. Belikov, V. I. In'shakov, L. E. Kulikova, A. P. Meshchanin, S. B. Nurushev, V. P. Romanov, V. V. Skvortsov, V. L. Solov'yanov, E. A. Ustinov, and N. N. Chernyavskii	820 62
High-Current Mode in Wire Photodetector with Anode Wire 28 μm in Diameter - A. F. Buzulutskov, V. G. Vasil'chenko, and L. K. Turchanovich	823 64
Detectors of Short-Range Particles Based on Neutron-Transmutation-Doped Silicon - E. M. Verbitskaya, P. M. Grinshtein, R. I. Guchetl', V. K. Eremin, N. B. Strokan, I. S. Shlimak, and E. V. Shokina	827 68
Measurement of Electron Drift Mobility and Lifetime in Specimens of Domestic Tetramethylsilane - A. I. Babaev, A. A. Balakin, L. G. Gorbatko, Yu. P. Endovin, A. V. Epifantsev, N. I. Mazurina, L. I. Novikova, G. Kh. Salakhutdinov, É. S. Starodubtsev, P. B. Shatalov, and B. S. Yakovlev	831 71
ELECTRONICS AND RADIO ENGINEERING	
High-Speed Device for Locking onto Pulse Trailing Edge - A. N. Egorychev and L. S. Priver	833 73
Independent Digital Recorder of High-Speed Processes - R. M. Zubairov and S. B. Shcherbakov	836 75
Nanosecond Time-Interval Converter - T. M. Dem'yanchuk, A. V. Bienko, and M. D. Prokopiv	839 78
CAMAC-Compatible Differential Pulse Discriminator-Counter - I. V. Tselikov	841 80
Noise Processor for Modulation Radiometer - A. A. Gorbachev, V. I. Danilov, and Yu. I. Modeev	844 83
High-Speed Analog-Digital Converters for Measurement of Random-Signal Shape - V. V. Valakh, V. F. Grigor'ev, and V. V. Danilevich	848 86
Generator of Pseudorandom Sequences with Variable Delay - G. R. Avanesyan	852 90

High-Voltage Variable-Duration Pulse Generator - T. E. Anisimova, E. V. Akkuratov, V. M. Gromovenko, Yu. P. Nikonov, and A. N. Malinin..... 855 93
Uncontrolled Pulse Dischargers with Increased Actuation Stability - O. V. Davydov and M. G. Nikiforov..... 857 95
Multigap Controlled Discharger - G. V. Naimark..... 860 98
Use of Transformer Instead of Charging Inductor in High-Voltage Generators - V. D. Aksinenko, E. A. Dement'ev, N. I. Kaminskii, A. T. Matyushin, and V. T. Matyushin..... 863 100
Input Section of Magnetic Pulse Generator with Inductive Storage Device - V. A. Vazhdaev, I. G. Kataev, and A. I. Kononov..... 868 104
Cable Collector of 1-MJ Capacitive Storage Device - A. M. Baltakhanov, V. N. Bondaletov, V. I. Zherlygin, and E. N. Ivanov..... 871 106
Digital Video-Pulse Amplitude Meter - D. P. Palyanitsa and A. M. Dement'ev..... 874 109
Simple Differential Amplitude Discriminator - N. I. Bashkirov..... 878 112
Reference-Pulse Shaper - G. V. Pil'ko..... 880 114

Volume 30, Number 4, Part 2, July-August, 1987

ELECTRONICS AND RADIO ENGINEERING
Highly Stable Pulse Stretchers - V. A. Svintenok and E. A. Nikiforov..... 883 117
Amplifier-Normalizer for Semiconductor Commutator - V. G. Brovchenko, A. V. Sergeev, and V. V. Shafirkin..... 886 120
Analog Device for Measurement of Extremal Values and Period of Infrasonic Signal - A. G. Avetisyan, M. M. Miridzhanyan, and R. A. Simonyan..... 890 123
Transponder for Synchronization of Optical Signals - V. V. Apollonov, V. V. Brytkov, S. I. Zienko, S. V. Murav'ev and Yu. A. Shakir..... 892 125
Wideband Linear Detector - A. P. Nevezhin and V. S. Faidyuk..... 894 127
Microwave Pulse Phase Meter - B. V. Prosin and S. A. Chernyi..... 895 128
Submillimeter Backward-Wave-Tube Spectrometer-Relaxometer - E. M. Gershenzon, G. N. Gol'tsman, and G. I. Mirskii..... 899 131
Apparatus for Study of Electron Paramagnetic Resonance under Conditions of High Pressure and Shear - A. A. Dadali, V. A. Shanditsev, I. P. Lastenko, and A. L. Buchachenko..... 906 137
Photocurrent Converter - S. A. Poltinnikov..... 909 140
Device for Supply, Control, and Protection of Superconducting Magnetic Bench - V. M. Lachinov, V. P. Savaneev, A. M. Starikov, and V. P. Filin..... 912 143
Compact Regulated High-Voltage Supply for Photomultipliers - M. V. Svintilov and O. É. Yakimovich..... 916 146

GENERAL EXPERIMENTAL TECHNIQUES
Low-Gain Supply for FÉU-84 for Strong Pulse Signals - A. N. Fedorov and I. V. Yashin..... 919 149
Spectral Response of some Types of Photomultipliers - V. N. Evdokimov, V. A. Polyakov, and V. I. Rykalin..... 921 151
Increasing the Accuracy of Recording of Differential Spectra by Means of Their Linear Combination - V. A. Gorelik, O. D. Protopopov, and A. V. Yakovenko..... 926 155
Magnetic Diode for Measurement of Magnetic-Field Strength - S. I. Fedotov and V. M. Zalkind..... 928 157
Modernization of SDL-2 Spectrometer - A. N. Stepanov and V. V. Struzhkin.... 930 159
Optical Spectrometer for Electron-Probe Microanalyzer - M. V. Zamoryanskaya, A. N. Zamoryanskii, and I. A. Vainshenker..... 932 161
High-Transmission Polychromator with Large Entrance-Slit Height - V. D. Kotsubanov, I. K. Nikol'skii, and V. I. Kovalenko..... 935 163

Russ.		Engl./Russ.	
93	Automatic Apparatus based on Acoustooptic Filter for Recognition of Surface Color Shade - S. V. Bezdenezhnykh, Kh. V. Gazarov, V. N. Zhogun, N. S. Kostin, V. M. Latyshev, I. Yu. Skobelev, V. I. Pustovoit, A. Ya. Faenov, and V. N. Shekhovtsov.....	937	165
95 98	Dynamic Laser Interferometer for Study of Dynamics of Heating of Gas - V. A. Andrianov, E. A. Andrushchak, A. V. Artamonov, V. B. Voronin, A. Yu. Voronin, I. N. Mazalov, S. V. Pashkin, A. V. Piskunov, V. P. Tychinskii, A. V. Rodin, V. N. Shulakov, and G. A. Khonyak.....	941	168
100	Nanosecond Light Source for Calibration of Multichannel Spectrometers - V. M. Avetisyan, V. G. Atanesyan, A. A. Nazaryan, and		
104	A. A. Frangyan.....	944	170
106	Stabilized Continuous CO_2 Laser that is Tunable over Lines of Five Bands - V. O. Petukhov, V. F. Pivovarchik, A. S. Solodukhin, S. Ya. Tochitskii, S. A. Trushin, and V. V. Churakov.....	946	172
109 112	Neon Laser Pumped by Electron Beam of Compact Accelerator - V. S. Skakun, V. F. Tarasenko, A. V. Fedenev, E. A. Fomin, and V. G. Shpak.....	949	175
114	Power-Stabilization System for He–Ne Laser with Transverse Microwave Discharge - Z. Imankulov, M. M. Mirinoyatov, I. A. Solov'ev, and S. K. Persheev.....	952	177
	Synchronization of Q-Switched YAG:Nd^{3+} Laser by Single Picosecond Pulse - I. G. Arutyunyan, S. P. Ishkhanyan, and T. A. Papazyan.....	954	179
117	Measurement and Stabilization of Direction of Laser-Beam Axis - S. V. Yakushkin, I. I. Sukhanov, and Yu. V. Troitskii.....	956	181
120	Photon Counting by Avalanche Photodiodes - I. R. Gulakov and S. A. Shunevich.....	959	183
123	IP-400 Meter for Weak Optical Absorption - I. A. Kudryashov, I. E. Lifshits, G. G. Prave, V. S. Chudakov, and V. B. Nosov.....	962	185
125	Vibration Damping of Experimental Apparatus for Production of Ultralow Temperatures - A. A. Golub.....	966	189
127 128	Determination of Dead Time of Recording Systems of X-Ray Microanalyzers - N. D. Sorokin and N. S. Yaroslavskaya.....	968	191
131	Apparatus Based on KSVU-5 System for Study of Semiconductor Films - S. A. Voroshilov, V. V. Kisin, and V. F. Nazvanov.....	972	194
	Device for Measurement of Resistance of Semiconductors in Heating Electric Fields - V. V. Loshkarev.....	975	197
137 140	Frequency Dependence of Resistive Component of Impedance of Silicon Thin-Film Resistors - S. V. Belogurov, V. V. Gostilo, and A. S. Yurov.....	978	199
143	LABORATORY TECHNIQUES		
146	Source of High-Enthalpy Jets of Liquid Vapors, Gases, and Their Mixtures - O. A. Nerushev, G. A. Khramov, and V. N. Yarygin.....	980	202
	Ion Source for MKh-7304 Mass Spectrometer - V. N. Fonov, I. A. Korolev, B. A. Kalinin, and V. A. Uzikov.....	983	204
149	Suppression of Electronic Noise of SON-A-1 Ultrahigh-Vacuum Pump - M. A. Maksimov and E. A. Penchko.....	985	205
151	Precision Triaxial Vacuum Goniometer with Remote Control - V. D. Kopanev, V. A. Dravin, A. É. Sedel'nikov, and A. V. Spitsyn.....	987	207
	Converter of Binary Angle Code - S. K. Barsegyan.....	990	210
155	High-Speed Capacitive Meter for Small Movements of a Conductive Surface - V. V. Apollonov, S. I. Zienko, S. V. Murav'ev, and S. A. Chetkin.....	993	212
	Receiver for Optical Transmission Line - E. P. Bochkar'.....	996	214
157 159	Bidirectional Counting of Interference Bands using one Photodetector - S. N. Surov.....	998	217
161	Laser Velocity Calibrator for Mössbauer Spectroscopy - A. P. Amulyavichyus and R. I. Davidonis.....	1000	218
163	Teflon Films for Protection of Optical Systems in Laser Processing of Metals - A. A. Nikitin, É. A. Mukomel, and É. V. Safonov.....	1004	221

Attachment to DRON X-Ray Diffractometers - B. K. Barakhtin and A. M. Chistyakov..... 1005 222
^{3}He Refrigerator Insert for Measurements at 0.32-300 K - B. I. Savel'ev and V. L. Tsymbalenko..... 1006 223
Calorimetric Liquid-Helium Flow Meter - A. I. Ageev, Yu. G. Bozhko, A. V. Zhirnov, V. A. Krendelev, E. G. Proshchaev, A. V. Tarasov, V. N. Fedorchenko, and V. P. Fomin..... 1008 225
Instrument for Measurement of Volt–Ampere Characteristics of Josephson Tunnel Contacts - A. P. Grebenkin and V. A. Iovchik..... 1010 226
Controller for dc Motor for Mixing of Solutions and Melts - S. G. Galyba, A. I. Dobretsov, and G. A. Emel'chenko..... 1012 228

Volume 30, Number 5, Part 1, September-October, 1987

Characteristics of Modern Standard Interfaces for Programmable Modular Multiprocessor Systems (Review) - V. M. Vukolikov, A. N. Vystavkin, V. V. Ivanov, S. V. Kiryukhin, M. B. Levinshtein, A. Ya. Oleinikov, and E. V. Pankrats..... 1015 6

NUCLEAR TECHNIQUES
Study of Operation of High-Current Nanosecond Accelerator with Inductor Section - V. M. Bystritskii, I. B. Ivanov, Ya. E. Krasik, A. V. Petrov, V. G. Tolmacheva, and É. G. Furman..... 1029 19
Study of Loading by Beam of Dual-Resonator Structure of Linear Electron Accelerator - O. S. Milovanov and I. A. Smirnov..... 1032 22
Low-Impedance Strip Shaping Lines for Linear Induction Accelerators - É. G. Furman..... 1037 26
Beam-Forming System for Electrostatic Accelerator - A. V. Almazov, O. B. Dzagurov, V. V. Krivolap, and E. I. Sirotinin..... 1043 31
Quadrupole Lens for Sectional Microtron - B. S. Ishkhanov, A. B. Savitskii, M. A. Sotnikov, and V. I. Shvedunov..... 1046 33
Time Referencing to Particle Bunches in Cyclotron Beam - A. V. Kuznichenko and V. N. Lebedev..... 1049 35
Modulator for LUÉK-20 Linear Induction Electron-Ion Ring Accelerator - G. V. Dolbilov, V. I. Kazacha, V. P. Sarantsev, and A. I. Sidorov.... 1052 38
System for Automatic Measurement of Beam Dimensions in Electron Accumulator - A. Yu. Zelinskii and V. V. Teslenko..... 1056 41
Resolution of NaI(Tl) Spectrometer in Absorbed-Energy Range of 0.6-125 MeV - S. A. Gerzon, A. N. Martem'yanov, V. L. Novikov, S. V. Semenov, and V. I. Ushakov..... 1058 43
Experimental Apparatus for Study of Polarization Effects in Charge-Exchange Reactions of Charged Mesons to Neutral Final States - I. A. Avvakumov, V. D. Apokin, N. I. Belikov, N. S. Borisov, É. I. Bunyatova, A. N. Vasil'ev, Yu. M. Goncharenko, O. A. Grachev, A. A. Derevshchikov, Yu. M. Kazarinov, M. Yu. Liburg, V. N. Matafonov, Yu. A. Matulenko, A. P. Meshchanin, A. A. Morozov, A. I. Mysnik, A. B. Neganov, B. S. Neganov, S. B. Narushev, A. F. Prudkoglyad, V. L. Rykov, V. V. Siksin, L. F. Solov'ev, V. L. Solov'yanov, Yu. A. Usov, and B. A. Khachaturov..... 1062 46
Recoil-Particle Detector for BIS-2 Spectrometer of Joint Institute for Nuclear Research - V. A. Aref'ev, I. N. Kakurin, A. Ya. Skiteva, and G. G. Takhtamyshev..... 1067 50
Device for Regulation of Specimen Temperature - Yu. E. Zaitsev, Mungir Li, V. A. Pashinskii, and S. N. Skokov..... 1073 55
4.5-m^2 Proportional Chamber for X-Ray Detectors - A. T. Avundzhyan, A. A. Bagdasaryan, L. S. Bagdasaryan, Z. K. Balayan, O. M. Vinnitskii, S. A. Kankanyan, A. G. Oganesyan, and A. G. Tamanyan..... 1074 56

		Engl./Russ.	
	Foil Adiabatic Calorimeter - V. P. Suchkov, M. D. Tarasov, and Yu. P. Shcherbak	1076	58
	COMPUTER APPLICATIONS		
	Automated Analysis of Cellular Structures - A. Ya. Kreines and V. E. Fradkov	1081	62
	Mathematical-Model Study of Servo System with Pulse-Duration Control of Micromovements - M. A. Dement'eva, A. P. Leonov, V. V. Popov, A. I. Skugarevskii, E. A. Ustinov, and N. N. Chernyavskii	1084	65
	Study of Digital Servo System of Measuring Platform in Velocity-Stabilization Mode - N. F. Galitsina, L. F. Zaitsev, V. V. Skvortsov, E. A. Ustinov, M. N. Ukhanov, and N. N. Chernyavskii	1090	70
	AP-002M Analog Processor for Spectrometers of Ionizing Radiation with Semiconductor Detectors - O. V. Ignat'ev, N. F. Shkola, and Yu. A. Shevchenko	1095	74
	CAMAC Interface for Power Meter - A. G. Golovanov and A. D. Golod	1100	79
	High-Speed Logic Modules with Programmable Functions - V. G. Zinov and A. V. Selikov	1102	81
	ELECTRONICS AND RADIO ENGINEERING		
	Stabilization of Photomultiplier Gain of Liquid Scintillation Counter - I. D. Alkhazov, V. D. Dmitriev, A. V. Kuznetsov, L. Z. Malkin, B. F. Petrov, A. K. Sheremet'ev, and V. I. Shpakov	1108	86
	Time-Referencing Device for Large Scintillation Counters - V. F. Boreiko, V. M. Grebenyuk, V. G. Zinov, V. V. Ivanov, Yu. A. Kozhevnikov, and G. D. Stoletov	1109	87
	Damping of Returning Pulses between Charging Supply and Shaping Line - V. F. Bukharov, A. I. Gerasimov, and A. S. Fedotkin	1113	90
	High-Speed High-Voltage Pulse Generator - V. I. Ushakov	1115	92
	Multichannel Spark Discharger - G. G. Kanaev and É. G. Furman	1117	95
	Wideband Frequency Multiplier - S. N. Seliverov	1120	97
	Logarithmic Converter - V. G. Ukolov	1122	98
	Tracking Power Supply to Increase Follower Speed - O. I. Andronov, V. G. Brovchenko, and I. Yu. Rodionov	1123	99
	Synchronized Self-Excited Oscillator Using Power Klystron - V. I. Beloglazov, L. M. Zavada, V. A. Kushnir, and L. N. Sdobnova	1125	101
	Apparatus for Measurement of Microwave Electromagnetic Fields in Planar Waveguide Systems - G. Yu. Kobzarev and V. N. Topol'nitskii	1127	102
	Automated Dispersion Interferometer-Polarimeter for Study of the Ionosphere and Radio-Wave Propagation - G. K. Solodovnikov, V. M. Russkin, and A. V. Savenkov	1130	105
	Peak-Value Meter - V. F. Verbitskii and O. A. Sechko	1134	109
	High-Voltage Meter with Optical Isolation - V. G. Nikolaichenko, Yu. K. Klimenko, N. A. Fefelov, and A. B. Chilikin	1136	112
	Optoisolator for Auger Spectrometer - V. A. Troshkin and D. P. Bernatskii	1139	114
	Single-Phase Transformerless Power Supply for Pulsed Laser - I. G. Muradov	1141	116
	Increasing the Predischarge-voltage Stability of a Pulsed-Laser Power Supply - M. I. Demchuk, A. K. Gilev, V. P. Mikhailov, and S. M. Dmitriev	1143	118
	Active Filter for Photomultiplier Power Supply - K. P. Kureichik, N. V. Kozlovskii, and I. Ya. Zlotnik	1145	120

Volume 30, Number 5, Part 2, September-October, 1987

GENERAL TECHNIQUES

High-Current Pulsed Source of Nonrelativistic Electrons - A. S. El'chaninov, B. A. Koval', G. A. Mesyats, D. I. Proskurovskii, and E. B. Yankelevich..... 1149 122

Cathode Unit with Electron Heating - Yu. V. Grigor'ev, V. A. Tarasenkov, and V. I. Fedorov..... 1153 126

Background Current of Radioisotope Manometer - A. A. Vydrik..... 1156 128

System for Pulsed Gas Admission into Vacuum Apparatus - O. K. Kurbatov, N. S. Novikov, and I. A. Ryabov..... 1158 130

Apparatus for Study of Statistics of Field Emission at Low Temperatures - V. I. Maslov, G. N. Fursei, A. V. Kocheryzhenkov, and N. P. Afanas'eva..... 1162 133

Registration of Currents of Positive and Negative Ions in Quadrupole Mass Spectrometer with One Measuring Channel - R. N. Gall', V. V. Gor'kovoi, V. A. Elokhin, A. F. Kuz'min, and S. V. Protopopov..... 1165 135

Experiment-Control System for Polimass Pulse Mass Spectrometer Installation - S. L. Kozlov, É. A. Shafranovskii, and N. F. Shchukin..... 1168 138

Mass-Spectrum Scanning in Long-Term Measurements by Synchronous Ion Count Method with MI-1201 Mass Spectrometer - S. G. Samotsvetov and P. I. Chalov..... 1170 140

Radiation-Recording System for High-Resolution Infrared Spectrometer - N. I. Bagdanskis, V. L. Popkov, and A. P. Ryabov..... 1173 142

Apparatus for Measurement of Induced-Absorption Spectra - M. U. Belyi, A. S. Kolesnik, B. A. Okhrimenko, and V. P. Yashchuk..... 1177 145

Faraday-Effect Light Modulator - V. E. Kositsyn..... 1180 148

Parameters of Assembly of Microchannel Plates with Micrometer Gaps - A. A. Demchenkova..... 1182 149

Strobed Multichannel Photon Counter - V. A. Ganichev, O. K. Elkin, I. N. Zaidel', V. A. Kozlov, G. M. Lyapunov, A. L. Malinovskii, E. A. Ryabov, and É. G. Sil'kis..... 1186 152

Programmable Electrooptic System for Modulation of Continuous Laser Radiation for Study of Optical Bistability - S. P. Apanasevich, A. V. Lyakhnovich, and G. V. Sinitsyn..... 1190 156

GaAs(Cr) Switch for Control of Electron-Optical Camera - V. K. Belyaev, I. A. Dubovoi, V. V. Ludikov, V. A. Podvyaznikov, A. M. Prokhorov, V. K. Chevokin, and M. Ya. Shchelev..... 1193 159

Tunable Laser Based on LG-126 - P. M. Gusak and S. S. Mikhailovskii..... 1197 162

Operation of ILGN-705 Laser in Periodic-Pulse Mode - A. M. Gamazeishchikov, I. L. Kamardin, A. A. Kuchinskii, V. A. Rodichkin, and V. A. Sheverev..... 1200 164

Bandpass Current Regulator for Argon-Ion Laser - K. V. Kiryunikov and B. Ya. Yurshin..... 1203 167

Binding of Multilayer Solenoid Windings - Yu. K. Katrukhin..... 1206 170

Sources of Polarizing Magnetic Fields and Their Gradients for NMR Tomography (Review) - A. A. Lukhvich and V. R. Churilo..... 1208 172

Nonhydrostatic Stress in Fixed-Pressure Vessels at Low Temperatures - V. F. Keptya, M. Yu. Lavrenyuk, and N. Ya. Minina..... 1210 174

Accumulation of Two-Dimensional Data Blocks in Experiments Using Standing X-Ray Waves - A. Yu. Kazimirov and M. V. Koval'chuk..... 1213 176

Dynamic Stabilization of Angular Position of Crystal in Experiments Using Standing X-Ray Waves - M. V. Koval'chuk, A. M. Nikolaenko, A. S. Semiletov, and G. A. Gusev..... 1216 178

Estimation of Stability of X-Ray Diffractometers - G. V. Fetisov, V. T. Markov, I. B. Zastenker, and N. M. Il'yasova..... 1220 181

Calculation of "Arc Effect" for KÉD-1 Microdiffractometer - O. I. Ageev, L. K. Kir'yanov, and B. M. Reizis..... 1223 184

Device for Charge and Current Relaxation Spectroscopy of Levels in Semiconductors - A. I. Rukovishnikov, V. I. Polyakov, P. I. Perov, B. G. Ignatov, O. N. Ermakova, and A. L. Aleksandrov..... 1226 187
Electric-Field Diagnosis in Dielectrics by Irradiation with Heavy Charged Particles - S. G. Boev and V. A. Paderin..... 1230 191
122 Determination of Degree of Nonuniformity of Resistivity Over Thickness of High-Resistance Layer - V. M. Kogan and P. V. Pavlov..... 1235 194
126
128 LABORATORY TECHNIQUES
Increasing the Efficiency of NP-255 Mössbauer Spectrometers - V. V. Leksin,
130 R. A. Manapov, and V. I. Sinyavskii..... 1239 197
Programmable Controller for Multiphase Stepper Motor - L. N. Lozovoi..... 1240 198
Stepper-Motor Controller with Electrical Step Subdivision - S. P. Babanskii
133 and V. V. Lederer..... 1244 201
Programmable Two-Channel Temperature Regulator - S. V. Ring and G. A. Nasyrov..... 1246 203
Preparation of Thin Silver Foils for Ion Spectrometer - V. N. Dronin..... 1249 205
135 Modification of SF-8 Spectrophotometer - Ya. É. Zarin'sh, Ya. É. Kariss, Yu. Ya. Ozols, L. A. Chugunov, and M. A. Élerts..... 1251 207
138 Thermo- and Pyroelectric Detector for Measurement of Energy and Time Parameters of Pulse-Modulated Radiation - O. A. Gerashchenko and V. L. Kremenchugskii..... 1254 209
140 Superconducting Rhenium Bolometer - I. Yu. Borisenko, L. P. Mezhov-Deglin, and V. Zh. Rozenflants..... 1256 211
142 System for Synchronization of Radiation of Three LTIPCh Lasers with External Devices - V. A. Musikhin, A. V. Pribytkov, and
145 I. A. Semiokhin..... 1259 213
148 Power Stabilization of He–Ne Laser - V. N. Maksimov..... 1261 215
Remote Gas Valve for Pressures to 2 GPa - N. V. Kapustin..... 1263 217
149 Automatic Specimen-Transport Device for Electron-Beam Apparatus - Yu. A. Kaldyrov, B. A. Koval', O. V. Smirnov, B. Ya. Yankelevich, and E. B. Yankelevich..... 1265 219
152 Dilatometer with Inductive Sensor - I. G. Zakrevskii and S. V. Cherepov..... 1269 223
Heat-Resistant Optical Adhesive with Low Vapor Pressure - E. A. Kolenko,
I. N. Petrov, and V. D. Mushenko..... 1272 225
156

Volume 30, Number 6, Part 1, November-December, 1987

159
162 Physical Resistance Standard based on the Quantum Hall Effect (Review) - I. Ya. Krasnopolin, V. M. Pudalov, and S. G. Semenchinskii..... 1275 5
164 NUCLEAR INSTRUMENTATION
High-Frequency Accelerating Field Amplitude Programmer for Electron
167 Synchrotron - I. M. Korbakova and V. I. Tolmachev..... 1298 25
170 Pulsed Magnet for Commutation of Packets of 15-MeV Electron Bunches - V. V. Zav'yalov and V. K. Semenov..... 1301 27
172 Laser System for Coordinate Referencing of an Emulsion Target to a Streamer Chamber - E. M. Gushchin, A. N. Lebedev, V. A. Ryabov, and
174 S. V. Somov..... 1303 29
Proportional Chamber with 1 mm Spacing of the Signal Wires - V. P. Balandin,
176 I. Veresh, B. N. Gus'kov, V. M. Grebenyuk,
P. Zalan, N. O. Kadagidze, V. R. Krastev, N. A. Kuz'min,
A. N. Maksimov, P. K. Man'yakov, G. V. Melitauri, Ya. Pazoni,
178 T. G. Pitskhelauri, E. A. Chudakov, and V. K. Yudin..... 1307 32
Multiwire Dielectric Detector for Measuring the Coordinates of Charged
181 Particles - S. G. Gasparyan, S. M. Gukasyan, R. L. Kavalov,
G. A. Papyan, L. K. Parlakyan, and G. G. Chubaryan..... 1313 37
184

Fabrication and Study of Cylindrical Scintillation Counters of the Ares Spectrometer - V. A. Baranov, P. G. Evtukhovich, S. M. Korenchenko, D. A. Mzhaviya, V. S. Smirnov, and Z. B. Tsamalaidze..... 1317 40
Uniformity of Light Collection of 0.5-m^2 Plastic Scintillation Detector - Yu. N. Bazhutov..... 1321 43
"Micron" System for Automation and Analysis of Measurements in a Nuclear Photoemulsion - M. I. Daion, K. A. Kotel'nikov, A. G. Martynov, V. M. Rappoport, V. A. Smirnitskii, and M. A. Ozerskii..... 1325 46
Application of a Parallel Encoder in a Modified Gray Code for Recording Clusters - L. N. Komolov, N. M. Nikityuk, A. I. Nomokonova, and A. L. Svetov..... 1329 49

COMPUTER APPLICATIONS
An SM-4 Computer and Camac Equipment in Automating a Roms-2A Mass Spectrometer - R. Sh. Bulgakov, R. A. Gafurov, D. N. Safin, and G. V. Avdonin..... 1333 52
A Method and Device for Recording Signal Sets in Hodoscope Systems by Syndrome Encoding - N. M. Nikityuk and A. V. Selikov..... 1336 55
Automated Phase Meter based on an Élektronika-60 Computer - Yu. P. Gul'chak, A. P. Golubev, V. V. Kalendin, V. Ya. Sup'yan, and I. V. Trotsishin..... 1343 61
Data-Acquisition Method for Multichannel Systems - A. T. Avundzhyan and A. G. Oganesyan..... 1346 64
Universal Device for Interfacing a Kh6-4 Correlator to an Élektronika D3-28 Microcomputer - S. M. Burkitbaev, A. I. Pak, and A. B. Kenzhebaev..... 1349 67

ELECTRONICS AND RADIO ENGINEERING
Fast Analog-to-Digital Converter for Physical Investigations - V. V. Borimskii, V. I. Novoderezhkin, and V. V. Maevskii..... 1353 71
Floating-Point Analog-to-Digital Converter - A. A. Golovanov and Yu. V. Zykov..... 1355 73
Analog–Digital Processing of Charge-Coupled Devices Output Signals - A. K. Elefterov, L. G. Karapetyan, and T. V. Abgaryan..... 1357 75
Self-Excited Phase-to-Frequency Converter - E. S. Kolesnik and K. V. Skul'skii..... 1360 78
Fast Pulsed System for Charging the Shaping Lines of an Accelerator - V. V. Vasil'ev, E. I. Lukonin, and É. G. Furman..... 1363 81
Snop-3 Pulse Generator - N. F. Kovsharov, A. V. Luchinskii, G. A. Mesyats, N. A. Ratakhin, S. A. Sorokin, and V. F. Fedushchak..... 1367 84
Multicable High-Voltage Pulse Generator - A. I. Gerasimov and V. F. Bukharov..... 1373 89
Switching a Capacitor Bank at Stored Energies up to 100 kJ - N. K. Kapishnikov and V. M. Muratov..... 1376 92
Extended-Life Trigatron Discharge Device - N. K. Kapishnikov and V. M. Muratov..... 1380 96
Parallel Discharge-Gap Switching in an Arkad'ev–Marks Generator - S. N. Rukin..... 1384 100

Volume 30, Number 6, Part 2, November-December, 1987

ELECTRONICS AND RADIO ENGINEERING
Switching Voltage-Pulse Shaper for Capacitive Load with Variable Output - V. B. Gurskii and R. E. Pyatetskii..... 1391 105

		Engl./Russ.	
	Diagnosis of High-Power Nanosecond Pulses of Microwave Radiation - N. M. Bykov, V. P. Gubanov, A. V. Gunin, S. D. Korovin, V. V. Rostov, and M. I. Yalandin	1393	107
40	Center-of-Gravity Shaper for Video Pulses - V. P. Orlovskii, S. O. Popov, and S. K. Naukov	1397	111
43	Nanosecond Pulse Amplifier with 600-V Output - L. I. Babak, A. N. D'yachko, L. P. Donskikh, V. N. Il'yushenko, and V. D. Obikhvostov	1400	113
46	GaAs-FET Pulse Amplifier with Subnanosecond Settling Time - A. N. Sidnev	1405	118
	Precision Transformer-Coupled Amplifier-Converters - O. E. Averchenkov and K. I. Sviridenkov	1407	119
49	DC Differential Amplifier with Periodic Zero Adjustment - V. V. Meer, V. I. Nesterov, and V. A. Yakovlev	1409	121
	Millimeter-Band Radiometer with Variable Josephson Point Contact - V. A. Kulikov and L. V. Matveets	1412	123
	Radio-Frequency RC Bridge - A. E. Lun'kov and S. E. Milovanov	1414	125
52	Stepper-Motor Controller with Dynamic Winding-Current Regulation - V. A. Burtelov	1418	128
55	Economical Variable Current Supply - V. B. Pyshkin, V. G. Rudychev, and V. P. Chugunov	1421	130
61	GENERAL TECHNIQUES		
	Portable Generator of Subnanosecond Fast-Electron Pulses - N. V. Belkin, M. Yu. Tarakanov, and M. D. Tarasov	1425	133
64	Evacuation by Zeolite Pump of Electron Gun with Foil Window - Yu. V. Grigor'ev and A. V. Stepanov	1427	135
67	Automated System for Testing and Calibration of Magnetic Electron-Energy Analyzer - S. V. Bulatova, V. I. Mikhailov, and V. D. Shkardun	1429	137
71	Measurement of Plasma Currents Induced by Injection of Relativistic Electron Beam into Gas - Yu. F. Bondar', A. A. Goman'ko, A. A. Ermakov, A. I. Kuz'min, G. P. Mkheidze, and		
73	A. A. Savin	1431	139
75	Apparatus for Study of Electric-Field Distribution in Plasma - Z. A. Oganezov, L. S. Timoshenko, and V. K. Tskhakaya	1435	142
78	Eight-Channel Ion Mass and Energy Analyzer for Study of Pulsed Plasma - V. I. Mikhailov, I. N. Slivkov, and G. L. Gromov	1439	145
81	Device for Automatic Range Selection and Switching for Measurement of Mass-Spectrum Intensity - A. V. Belozerov, V. V. Naumov, and V. I. Sheleshkevich	1443	149
	Effect of Magnetic Fields on Photomultiplier Performance - S. A. Bulychev and V. V. Kulikov	1447	152
84	Oscillographic Method for Determination of Edge Profiles of Subnanosecond Laser Pulses with Large Power Swings - V. A. Malinov, A. V. Charukhchev, and V. N. Chernov	1450	155
89	Precision Laser Intraresonator Interferometer Spectrometer - A. G. Zhiglinskii, I. V. Kuznetsov, M. V. Levin, and		
92	N. S. Ryaznov	1453	157
96	Pulse Selector for Mode-Locked Lasers - K. N. Bakinovskii, G. I. Rai, and G. V. Sharonov	1457	160
100	Single-Quantum Visible-Region Radiator - É. G. Sil'kis	1459	161
	Device for Measurement of Mode Phase Lags in Planar Optical Waveguides - V. E. Strigalev, L. M. Shteingart, and V. M. Kul'benkov	1462	164
	Electron-Optical System of Ultrahigh-Voltage Electron Microscope - P. A. Stoyanov, I. S. Makarova, and A. V. Freidman	1464	166
	X-Ray Crystal Monochromator with Curved Soller Collimator - V. A. Vershkov and Yu. Yu. Karzhavin	1470	171
105			

Controller for Deep-Level Spectrometer - I. B. Puzin, A. I. Khorunzhii, and V. T. Aleksandrov..... 1474 174

LABORATORY TECHNIQUES

Adaptation of N062 and N046 Tape Recorders for Use in Automated Systems - V. V. Onis'ko..... 1479 179

Wideband Quartz-Crystal Synchronization - S. S. Matevosyan and D. M. Khachatryan..... 1481 180

Device for Automatic Recording of Variation of Electron Work Function - V. A. Troshkin, D. P. Bernatskii, and M. V. Loginov..... 1482 181

Electron-Beam Evaporation for Production of Multilayer Systems of High-Melting Metals - V. M. Ievlev and A. S. Ognev..... 1484 183

Device for Movement of Specimen Holder from Air Lock to Manipulator of Ultrahigh-Vacuum Chamber - A. A. Isaev..... 1487 185

Measurement of Pulse Pressure in Plasma by Crusher Gauge - E. V. Kalachnikov and P. N. Rogovtsev..... 1489 186

Seal for High-Pressure Vessels with Increased Locking Force with Heating - N. V. Kapustin and V. I. Sorokin..... 1492 189

SOK-1 Laser Optical System with Television Attachment - V. P. Ryabukho and L. A. Surmenko..... 1494 190

Low-Temperature Cell for Magnetooptic Studies with Laser Excitation - V. V. Valyavko and V. P. Osipov..... 1495 192

Device for Adjustment of Precision Motion Transducers - A. S. Kuz'minskii, S. S. Skulachenko, and I. I. Yudin..... 1497 193

Controller for Thermoelectric Cooler - S. S. Karvatskii and S. A. Zarubin..... 1500 195

Elastic Vacuum Seal for Cryogenic Temperatures - E. A. Kolenko..... 1502 197

uss.

174

179

180

181

183

185

186

189

190

192

193

195
197